Manual
Videoscope PCE-VE 500

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Contents

1   Introduction

Thank you for purchasing a Wireless Video Endoscope PCE-VE 500 from PCE Instruments.
This radio Wireless Video Endoscope with flexible or semi-flexible wire is a professional meter for workshops and for installation work and also other areas where it is necessary to view the interior of machines and installations. This is the case in industry, in biological sectors, for instance for the observation of nests, as well as in the archaeological sector. The device is delivered with a wireless and removable digital LC display of 3.5". This serves to connect the videoscope to a TV in case you wish to view your target on a larger screen. You can also save images or videos on the SD card for further analysis on your PC or laptop. Both the videoscope and the display are powered by a rechargeable battery or alternatively by a mains component.

2   Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual.

- The device may only be used in approved temperature ranges.
- The case should only be opened by qualified personnel of PCE Instruments.
- The instrument should never be placed with the user interface facing an object (e.g. keyboard side on a table).
- You must not make any technical changes to the device
- The appliance should only be cleaned with a damp cloth / use only pH-neutral cleaner, no corrosive liquid such as alcohol.
- This product is designed for industrial use only. Do not use the system for human or any other biological inspection.
- Do not remove the SD card when capturing photos or video as this may cause loss of data and damage the SD card.
- Video recording requires an SD card with fast writing speed. We recommend 80 X (or above) writing speed SD cards for best video quality.
- Do not use this product in a fuel tank or other dangerous environments such as gasoline or alcohol storage tanks.
- Do not try to disassemble the product as this may cause electric shock and could damage the unit.
- Please use only recommended components or accessories. Unapproved components and accessories may cause damage.
- Avoid direct exposure to sunlight for a long period of time. Store the system in a cool, dry and well-ventilated place.
- If the system "freezes" (so that pushing buttons has no effect), push the Reset button on the back of the system. Check the system description section for the location of the Reset button.
- To avoid danger, do not put the insertion tube into any flammable liquid or gas.
- The insertion tube contains a series of small wires that control the optics and electronics of the camera tip. To ensure long-term reliability, do not bend the insertion tube more than 90 degrees and always bend the insertion tube in as large an arc as possible during usage and storage.
- To clean the lens and camera head, use the cleaning liquid and swab provided in the cleaning kit.

This user's handbook is published by PCE Instruments without any guarantee.

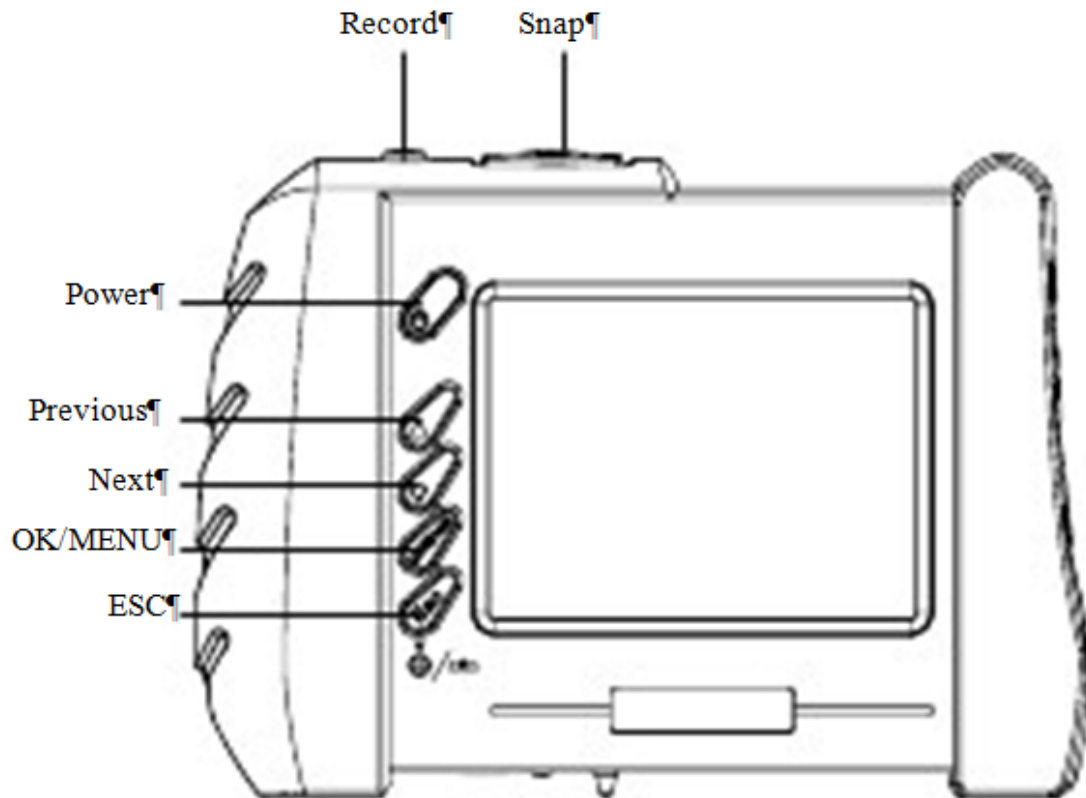We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments.
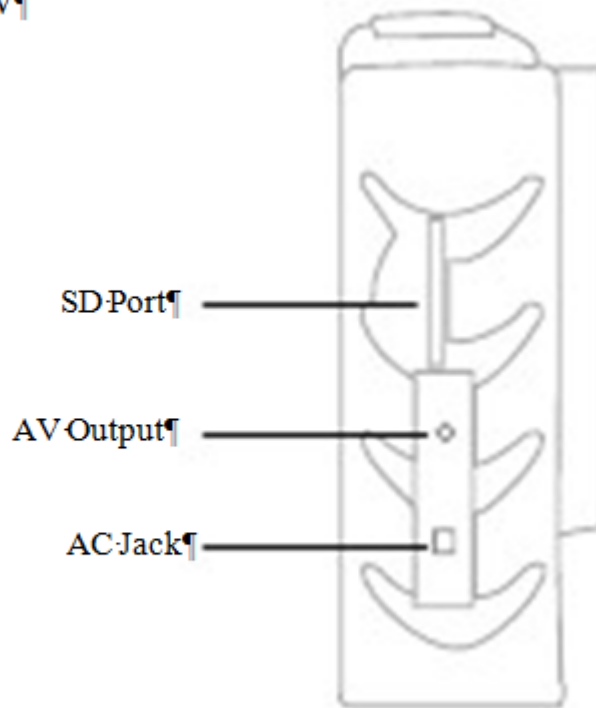
3   Specification

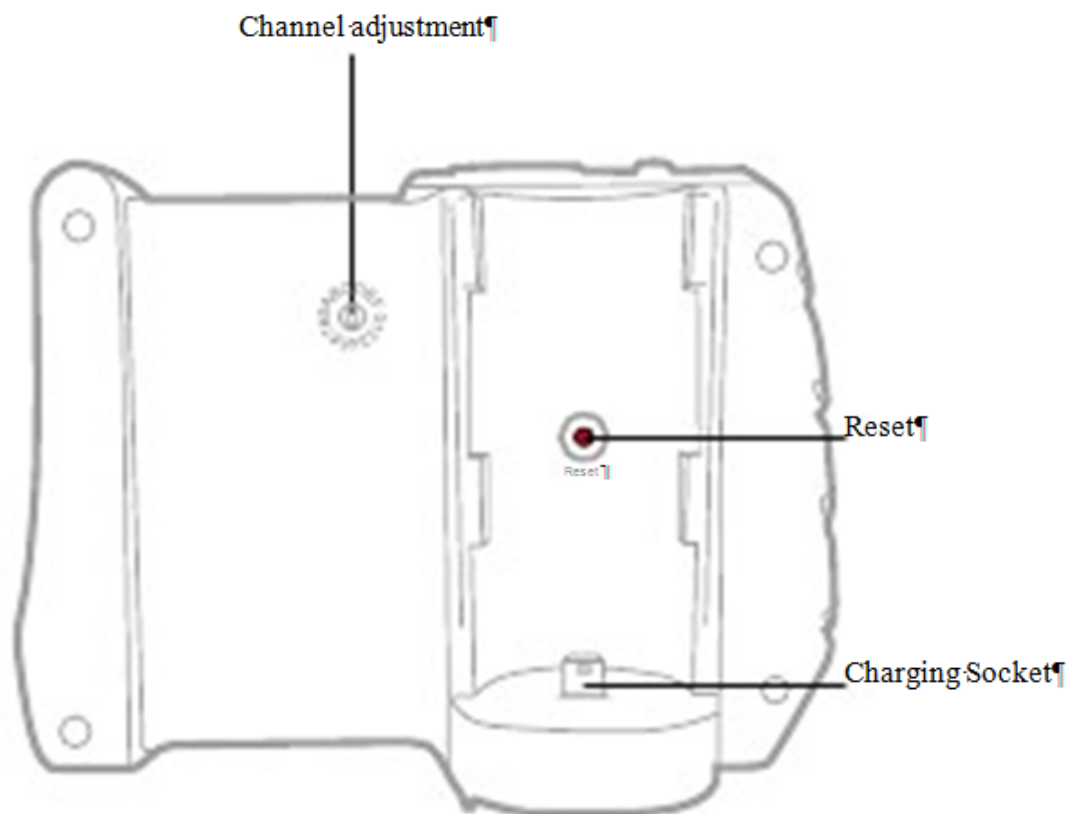|	
Flexible cable length	2000 mm
Cable type	flexible
Cable diameter	5.5 mm
Field of view / angle	horizontal 46º vertical 34º diagonal 56º
Image sensor	CMOS
Minimum illumination	0 lx
Size of the display	3.5 " LCD
Pixels	640 x 480
Video	PAL / NTSC
Video connection	AV-out
Transmitting frequency	2.4 GHz 4 channels (2414, 2432, 2450 or 2468 MHz)
Image format	JPEG
Compression format	MPEG4
Image frequency	30 frames per second
Memory	2 GB (SD memory card), expendable to 16 GB
Vision distance	1 ... 6 cm
Light source	LED
Operating / storage temperature	-20 ... 60 ºC
Power supply	handle bar: rechargeable Li-Polymer battery 3.7V LC display: rechargeable Li-Polymer battery 3.7V mains component AC 100-240V 50-60Hz
Water resistant	IP 67, max. 1.00 m depth oil and fuel resistant
Battery life	4 hours (charging time 2 hours)
Exposure	LED infinitely adjustable (0 … 275 Lux / 4 cm)
Audio	Integrated microphone
Dimensions	handle bar 140 x 35 x 32 mm LC display 147 x 106 x 70 mm
Weight	handle bar 220 g (without insertion tube) LC display 335 g

4 System description

FRONT VIEW¶

SIDE·VIEW¶

SD·Port¶

AV·Output¶

AC·Jack¶

BACK·VIEW¶

Channel·adjustment¶

Reset¶

Reset¶

Charging·Socket¶

5   Instructions

5.1   To get started

1. Screw the insertion tube into the connector according to the direction of the arrow and tighten the screw nut. (Figure 1)

2. To activate the handle bar with the insertion tube, turn the LED adjustment wheel clockwise until you hear a "click" followed by illumination of the green light. (Figure 2)

3. Push and hold the ⏻ button of the LCD unit for 3 seconds until the image is displayed on the monitor. (Figure 3)

4. Target the camera at the desired object. Push 📷 to capture a .jpg image or 🎥 to record an .avi video. (Figure 4)
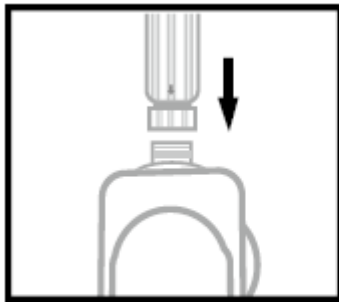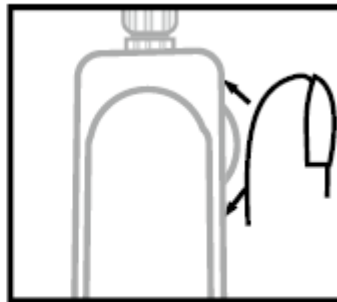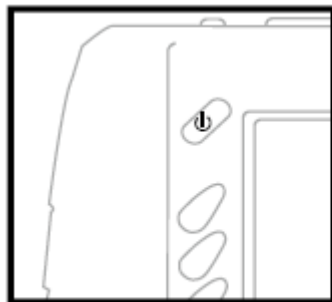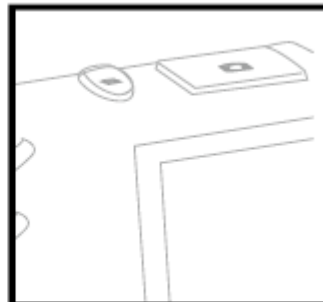
Figure.1

Figure.2

Figure.3

Figure.4

5.2   Control modes

This device provides two control modes, which are called "direct control" and "wireless control".

5.2.1   Direct control

Insert the handle bar with the insertion tube into the charging socket located on the back of the LCD unit. This will activate Direct Control transmission mode. In this mode, all images are transmitted via the wired socket. This can be helpful when working in areas where other high-frequency wireless equipment is used as there will be no interference with the video signal.

5.2.2   Wireless control

When you disconnect the handle bar from the LCD unit, the device is automatically operated in Wireless Control mode.

5.3   Operation modes

This device has 3 operation modes which are Preview, Browse and Menu mode.

Preview mode	Preview mode will be activated as soon as the handle bar is powered on. When you target the camera tip at an object, the image will be displayed at the same time. All photo and video records are made in this mode.
Browse mode	The user can view images instantly and carry out basic file management in this mode.
Menu mode	The user can make settings and carry out file management in this mode.

Note: The system automatically returns from Menu mode to Preview mode after 150 seconds of inactivity.

5.4   Keys

Buttons	Preview mode	Browse mode	Menu mode
▲	Switch to Browse mode to view images and videos	Move to previous image or video	Move one line up
▼	Switch to Browse mode to view images and videos	Move to next image or video	Move one line down
OK/MENU	Switch to Menu mode	Play / pause video	Execute selected command
ESC	Push briefly to enlarge target by 100% (2 x zoom); push and hold to see mirrored view	Return to Preview mode	Return to Preview mode
◯	Capture a .jpg image		
🎥	Start or stop .avi video recording	Delete the selected image / video	

5.5   Settings

5.5.1   Main menu

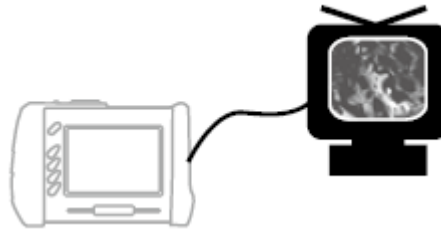Push the OK/MENU button in Menu mode to execute desired commands as indicated below

5.5.2   To delete all files

After initiating this command, select "yes" or "no" by pushing the up or down arrow button.
To delete all files, select "yes". Exit by pushing the OK/MENU button.
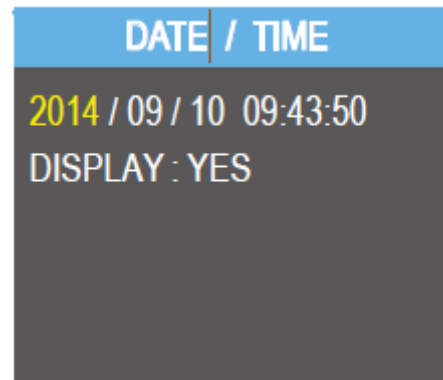

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5.5.3   Video output

1. Plug one end of the included AV cord into the AV socket located on the right-hand side of the LCD unit and plug the other end of the AV cord into the "AV in" socket on the external monitor.
2. Push OK/MENU.

3. Push ▲ or ▼ to move to the "video output" option.
4. Push OK/MENU
   Image status: image will be transmitted to the external monitor.

5.5.4   To setup date and time

Use the arrow buttons to select Year/Month/Day or

Hour/Minute/Second. Push 📹 to increase the

number or 📷 to decrease. Select "display: yes" to
print the image with the date included.

DATE / TIME

2014 / 09 / 10 09:43:50
DISPLAY : YES

5.5.5   Language

Select the operating language.

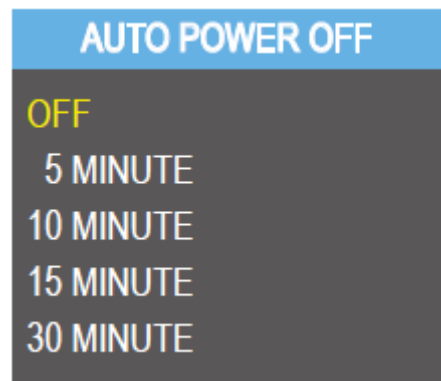MAIN MENU

БЪЛГАРСКИ ЕЗИК
ČESKY
DANSK
NEDERLANDS
ENGLISH

5.5.6 TV system

Set up your video format (NTSC / PAL).
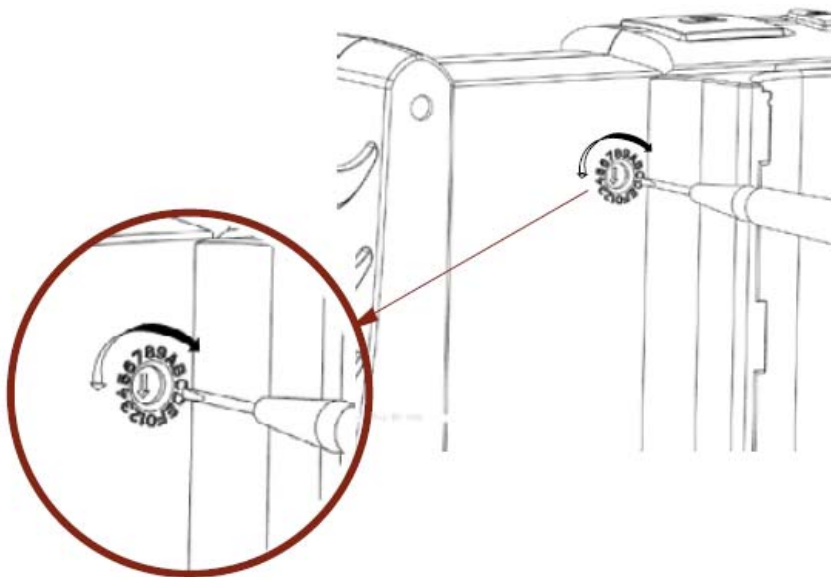
5.5.7 Auto power off

Set the time after which the device will power off automatically.

5.6 To adjust the channel

The handle bar and the LCD unit must be on the same channel during wireless transmission. Adjust the channel by using a small slotted screwdriver, following the direction of the arrows as shown below. Please refer to the following chart to select a suitable channel.

Channel	Arrow indication	Frequency
1	9, 1	2414 MHz
2	A,2	2432 MHz
3	C,4	2450 MHz
4	8,0	2468 MHz

5.7   Lights of the handle bar

LED light colour	Battery status	Note
Green	In use	Working with full battery
Dark red	Low battery	Please recharge the battery when the dark red light appears during operation
Orange	Charging while in use	Charging while in use
Red	Charging while switched off	Charging while switched off
None	Full battery (while switched off)	The light turns off as soon as the battery is fully charged

5.8   Operations

5.8.1   Power on/off

To turn on the LCD unit, push and hold the ⏻ button for 3 … 5 seconds until you see the signs below on your monitor:

▬▬▬▬▬▬   SD card memory capacity

🔋   Battery capacity

5.8.2   To switch from wireless to direct control

1. Insert the handle bar into the charging socket of the LCD unit as demonstrated in the figure below.
2. The image may look blurry for some time while switching from wireless to direct control.

5.8.3   To take pictures

Push the 📷 button during Preview mode to take a picture. Then push the ▲ button to view the picture you have just taken.

Image status: Returns to preview mode after picture is taken.

2014 / 09 / 18   11:25:27

5.8.4   Video recording

1. Push the ![camera] button to start video recording.

Image status: Recording time will appear at the left-hand bottom side of the display

2. Push the ![camera] button again to stop recording.

Image status: Recording time disappears.

5.8.5   To view photos / videos

1. Push ▲ or ▼ during preview mode.

Image status: Displaying the photo / video last taken.

2. Push ▲ or ▼ again to view the last or second last photo / video.

Image status: All files will be saved in chronological order.

Note: Each video will be displayed until it ends and after that, the next video or photo will be displayed.

5.8.6   To delete a picture or video (in Browse mode only)

1. Enter Browse mode and find the picture or video you wish to delete by pushing the ▲ or ▼ buttons.

2. Push ![camera] .

3. Push OK/MENU to delete the selected file or push ESC to cancel.

5.8.7   Zoom-In

Push the ESC button once. The display will show 2 x zoom-in view while ⊕ 2.0 x appears on the right-hand bottom side of the display.

BEFORE ZOOM-IN   AFTER ZOOM-IN

Press ESC again to return to the original view.

5.8.8   Mirror

Push and hold the ESC button for 3 seconds to activate mirror view while ⊟⊡ appears on the right-hand bottom side of the display. Then push and hold the ESC button for 3 seconds to return to the original view.

WITHOUT MIRROR EFFECT   WITH MIRROR EFFECT

5.8.9   To re-charge the battery

1. To re-charge the LCD unit only, plug the adapter into the outlet and insert the jack plug into the jack of the LCD unit.
2. To re-charge the LCD unit and the handle simultaneously, insert the handle into the rear slot of the handle bar.
3. To re-charge the handle bar only, connect the handle bar to a PC or laptop using a standard mini USB cable.

Caution: Make sure that the LCD unit and the handle bar are turned off during re-charging and that the PC / laptop is on during re-charging via USB cable. Ignore the "found new hard drive" message.

6 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.

7 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

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